

from the one to the other, the species are for the most part different, and new generic forms are met with, and, as I have elsewhere shown, the physical conditions of the two periods were essentially different.*

It is, however, to be observed that since—as Stur and others have shown—*Calamites radiatus*, and other forms distinctively Devonian in America, occur in Europe in the Lower Carboniferous, it is not unlikely that the Devonian flora, like that of the Tertiary, appeared earlier in America. It is also probable, as I have shown in the “Reports” already referred to, that it appeared earlier in the Arctic than in the temperate zone. Hence an Arctic or American flora, really Devonian, may readily be mistaken for Lower Carboniferous by a botanist basing his calculations on the fossils of temperate Europe. Even in America itself, it would appear, from recent discoveries in Virginia and Ohio, that certain Devonian forms lingered longer in those regions than farther to the northeast; † and it would not be surprising if similar plants occurred in later beds in Devonshire or in the south of Europe than in Scotland. Still, these facts, properly understood, do not invalidate the evidence of fossil plants as to geological age, though errors arising from the neglect of them are still current.

VI.—GEOLOGICAL RELATIONS OF SOME PLANT-BEARING BEDS OF EASTERN CANADA. (“Report on Erian Plants,” 1871.)

The Gaspé sandstones have been fully described by Sir W. E. Logan, in his “Report on the Geology of Canada,” 1863. He there assigns to them a thickness of seven thousand and thirty-six feet, and shows that they rest conformably on the Upper Silurian limestones of the Lower Helderberg group (Ludlow), and are in their turn overlaid unconformably by the conglomerates which form the base of the Carboniferous rocks of New Brunswick. I shall add here merely a few remarks on points in their physical character connected with the occurrence of plants in them.

Prototaxites (Nematophyton) Logani and other characteristic Lower Erian plants occur in the base of the sandstones at Little Gaspé. This fact, along with the occurrence, as stated in my paper of 1863, of rhizomes of *Psilophyton* preserving their scalariform

* “Reports on Devonian Plants and Lower Carboniferous Plants of Canada.”

† Andrews, “Palæontology of Ohio,” vol. ii.; Meek, “Fossil Plants from Western Virginia,” Philosophical Society, Washington, 1875.